

Serial No. 10/070,084
 Docket No. PU3517USw
 Reply to Office Action of December 16, 2004

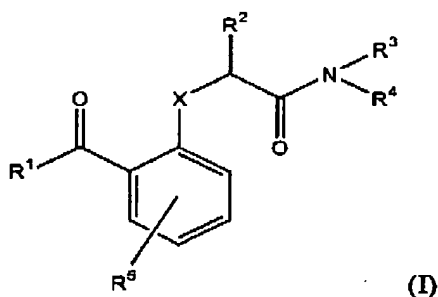
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (canceled)

Claim 2 (currently amended) A compound of formula (I)



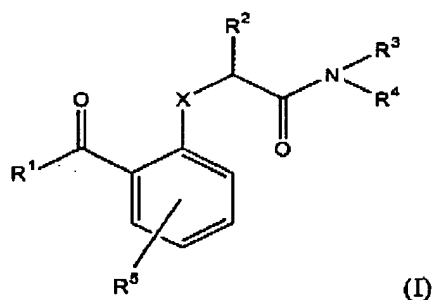
wherein X is O; R^1 is C_{6-14} aryl substituted with one or more substituents selected from the group consisting of halogen, $-CF_3$, C_{1-8} alkyl, $-CN$, $-SR^6$, $-S(O)_2R^6$; or heterocycle, optionally substituted with one or more substituents selected from the group consisting of C_{1-8} alkyl, $-CN$, and C_{6-14} aryl C_{1-8} alkyl; R^6 is C_{1-8} alkyl, optionally substituted with halogen; R^7 is C_{1-8} alkyl optionally substituted with ~~one or more substituents selected from the group consisting of~~ hydroxy; $-NH_2$; or heterocycle; R^2 is hydrogen; R^3 is hydrogen or C_{1-8} alkyl; R^4 is heterocycle, optionally substituted with one or more substituents selected from the group consisting of oxo, halogen, C_{1-8} alkyl, $-OR^{11}$ and $-SR^{10}N(R^{10})_2$, $S(O)_2NR^8R^9$; or C_{6-14} aryl substituted with one or more substituents selected from the group consisting of hydroxy, halogen, $-CF_3$, C_{1-8} alkyl, hydroxy C_{1-8} alkyl, $-CN$, $-NO_2$, $-C(O)NH_2$, $-S(O)R^7$, $-S(O)_2R^7$, $-S(O)_2NR^8R^9$, $-OR^{11}$, $-C(O)NR^{11}$, $-C(O)OR^{11}$, $-NR^{11}$, $-NC(O)R^{11}$, and heterocycle which may be optionally substituted with one or more substituents selected from the group consisting of oxo, C_{1-8} alkyl and heterocycle C_{1-8} alkyl; R^8 and R^9 are the same or different and are selected from the group consisting of hydrogen, C_{1-8} alkyl, C_{1-8} alkylheterocycle, heterocycle, and C_{3-6} cycloalkyl; R^{10} is C_{1-8} alkyl; R^{11} is C_{1-8} alkyl, optionally substituted with $-SO_2NR^8R^9$; and R^5 is halogen or $-NO_2$; or a pharmaceutically acceptable salt thereof.

Claim 3 (previously presented) A compound of formula (I)

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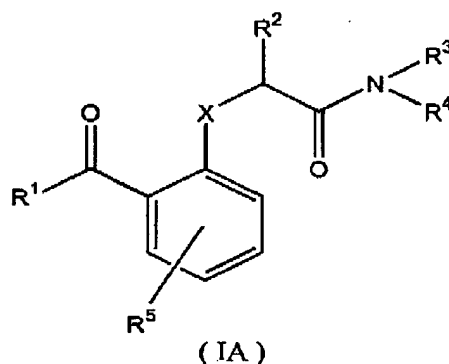
alkyl, $-\text{NO}_2$, $-\text{NH}_2$, C_{1-8} alkylamino, CF_3 , or alkoxy; or a pharmaceutically acceptable salt thereof.

Claim 5 (previously presented) A compound of formula (I)



wherein X is O, R^1 is C_{6-14} aryl substituted with one or more substituents selected from the group consisting of halogen, $-\text{CF}_3$, C_{1-8} alkyl, and $-\text{CN}$; R^2 and R^3 are hydrogen; R^4 is C_{6-14} aryl substituted with one or more substituents selected from the group consisting of halogen, C_{1-8} alkyl, $-\text{CN}$, $-\text{NO}_2$, $-\text{S}(\text{O})\text{R}^7$, $-\text{S}(\text{O})_2\text{R}^7$, $-\text{NS}(\text{O})_2\text{R}^7$, wherein R^7 is $-\text{NH}_2$; and R^5 is halogen; or a pharmaceutically acceptable salt thereof.

Claim 6 (previously presented) A compound of formula (IA)



wherein:

X is C, O, or N;

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R¹ is C₆₋₁₄aryl which may be optionally substituted with one or more substituents selected from the group consisting of halogen, -CF₃, C₁₋₈alkyl, C₁₋₈alkylamino, alkoxy, C₃₋₆cycloalkyl, C₂₋₆alkenyl, C₆₋₁₄arylC₂₋₆alkenyl, -CN, -NO₂, -NH₂, -SR⁶, -S(O)₂R⁶, -S(O)R⁷, -S(O)₂R⁷, -C(O)R⁷, C₂₋₆alkenyl which may be optionally substituted with a substituent selected from the group consisting of hydroxy, halogen, aryl, and heterocycle and C₂₋₆alkynyl which may be optionally substituted with a substituent selected from the group consisting of hydroxy, halogen, aryl, C₃₋₆cycloalkyl, and heterocycle;

R⁶ is C₁₋₈alkyl optionally substituted with one or more substituents selected from the group consisting of hydroxyl, halogen, -CF₃, aryl, and heterocycle;

R⁷ is C₁₋₈ alkyl, optionally substituted with one or more substituents selected from the group consisting of hydroxy, halogen, aryl, C₃₋₆cycloalkyl and heterocycle; -NH₂; or heterocycle;

R² is hydrogen, halogen, or C₁₋₈alkyl;

R³ is hydrogen;

R⁴ is C₆₋₁₄aryl substituted with one or more substituents selected from the group consisting of hydroxy, halogen, -CF₃, C₁₋₈alkyl, hydroxycycloalkyl, -CN, -NO₂, C₁₋₈alkylamino, heterocycleC₁₋₈alkyl, -C(O)NH₂, -S(O)R⁷, -S(O)₂R⁷, -C(O)R⁷, -NS(O)₂R⁷, -S(O)₂NR⁸R⁹, -S(O)₂NHR¹¹, -S(O)₂R¹¹, -S(O)₂NR⁷COR¹¹, -S(O)₂NHCOR¹¹, -S(O)₂[COR¹¹]_n wherein n is 1, 2, or 3, -OR¹¹, -OR¹¹OR¹¹, -C(O)R¹¹, -C(O)NR¹¹, -C(O)OR¹¹, -NR¹¹, -NC(O)R¹¹, heterocycleC₂₋₆alkenyl, heterocycle which may be optionally substituted with one or more substituents selected from the group consisting of oxo, C₁₋₈alkyl, and C(O)OR¹¹, and C₁₋₈alkyl which may be optionally substituted with one or more substituents selected from the group consisting of -CN and heterocycle, optionally substituted with -C(O)R¹¹;

R⁸ and R⁹ are independently selected from the group consisting of hydrogen, C₃₋₆cycloalkyl, C₁₋₈alkyl optionally substituted with one or more substituents selected from the group consisting of oxo, heterocycle, CN and C₆₋₁₄aryl optionally substituted with alkoxy, C₁₋₈alkylamino, C₁₋₈alkylheterocycle, heterocycle, heterocycleC₁₋₈alkyl, C₃₋₆cycloalkylC₁₋₈alkyl, and C₃₋₆cycloalkyl;

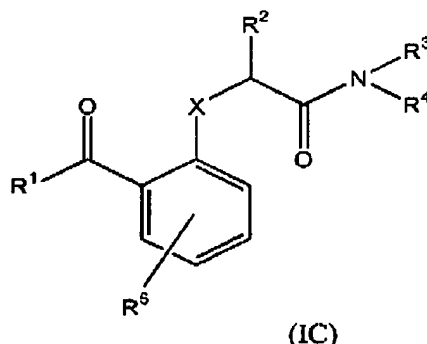
R¹¹ is C₁₋₈alkyl, optionally substituted with one or more substituents selected from the group consisting of hydrogen, hydroxy, halogen, C₁₋₈alkyl, C₃₋₆cycloalkyl, alkoxy, -S(O)₂NR⁸R⁹, NCONH₂, and heterocycle optionally substituted with one or more substituents selected from the group consisting of oxo, hydroxy, and C₁₋₈alkyl; heterocycle optionally substituted with heterocycleC₁₋₈alkyl; or C₆₋₁₄aryl optionally substituted with alkoxy;

R⁵ is hydrogen, halogen, C₁₋₈alkyl, -NO₂, -NH₂, C₁₋₈alkylamino, CF₃, or alkoxy;

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wherein X is O; R¹ is C₆₋₁₄aryl substituted with one or more substituents selected from the group consisting of halogen, -CF₃, and -CN; R² is hydrogen; R³ is hydrogen; R⁴ is heterocycle; and R⁵ is halogen; or a pharmaceutically acceptable salt thereof.

Claim 10 (previously presented) A compound of formula (IC)



wherein:

X is C, O, or N;

R¹ is heterocycle, optionally substituted with one or more substituents selected from the group consisting of C₁₋₈alkyl, halogen, -CN, C₆₋₁₄arylC₁₋₈alkyl and heterocycle;

R² is hydrogen, halogen, or C₁₋₈alkyl;

R³ is hydrogen;

R⁴ is C₆₋₁₄aryl substituted with one or more substituents selected from the group consisting of hydroxy, halogen, -CF₃, C₁₋₈alkyl, hydroxyC₁₋₈alkyl, -CN, -NO₂, C₁₋₈alkylamino, heterocycleC₁₋₈alkyl, -C(O)NH₂, -S(O)R⁷, -S(O)₂R⁷, -C(O)R⁷, -NS(O)₂R⁷, -S(O)₂NR⁸R⁹, -S(O)₂NHR¹¹, -S(O)₂R¹¹, -S(O)₂NR⁷COR¹¹, -S(O)₂NHCOR¹¹, -S(O)₂[COR¹¹]_n wherein n is 1, 2, or 3, -OR¹¹, -OR¹¹OR¹¹, -C(O)R¹¹, -C(O)NR¹¹, -C(O)OR¹¹, -NR¹¹, -NC(O)R¹¹, heterocycleC₂₋₆alkenyl, heterocycle which may be optionally substituted with one or more substituents selected from the group consisting of oxo, C₁₋₈alkyl, and C(O)OR¹¹, and C₁₋₈alkyl which may be optionally substituted with one or more substituents selected from the group consisting of -CN and heterocycle, optionally substituted with -C(O)R¹¹;

R⁷ is C₁₋₈alkyl, optionally substituted with one or more substituents selected from the group consisting of hydroxy, halogen, aryl, C₃₋₆cycloalkyl and heterocycle; -NH₂; or heterocycle;

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R² is hydrogen, halogen, or C₁₋₈alkyl;

R³ and R⁴ are independently hydrogen; hydroxy; heterocycle optionally substituted with one or more substituents selected from the group consisting of oxo, hydroxy, hydroxyC₁₋₈alkyl, halogen, C₁₋₈alkyl, -OR¹¹, -S(O)₂NR⁸R⁹, and -SR¹⁰N(R¹⁰)₂; or R³ and R⁴ together with the nitrogen atom to which they are attached form a heterocycle which may be optionally substituted with C₆₋₁₄aryl, which may be optionally substituted with one or more substituents selected from the group consisting of C₁₋₈alkyl and -NO₂; provided that R³ and R⁴ cannot both be hydrogen or hydroxy;

R⁸ and R⁹ are independently selected from the group consisting of hydrogen, C₃₋₆cycloalkyl, C₁₋₈alkyl optionally substituted with one or more substituents selected from the group consisting of oxo, heterocycle, CN and C₆₋₁₄aryl optionally substituted with alkoxy, C₁₋₈alkylamino, C₁₋₈alkylheterocycle, heterocycle, heterocycleC₁₋₈alkyl, C₃₋₆cycloalkylC₁₋₈alkyl, and C₃₋₆cycloalkyl;

R¹⁰ is C₁₋₈alkyl;

R¹¹ is C₁₋₈alkyl, optionally substituted with one or more substituents selected from the group consisting of hydrogen, C₁₋₈alkyl, -S(O)₂NR⁸R⁹, and heterocycle optionally substituted with one or more substituents selected from the group consisting of oxo, and C₁₋₈alkyl;

R⁵ is hydrogen, halogen, C₁₋₈alkyl, -NO₂, -NH₂, C₁₋₈alkylamino, CF₃, or alkoxy; or a pharmaceutically acceptable salt thereof.

Claim 13 (previously presented) A compound of formula (ID) according to claim 12 wherein X is O; R¹ is heterocycle; R² and R³ are hydrogen; R⁴ is heterocycle; and R⁵ is halogen; or a pharmaceutically acceptable salt thereof.

Claim 14 (previously presented) A compound according to claim 6 wherein X is O.

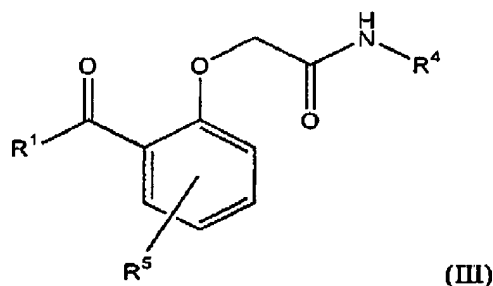
Claim 15 (canceled)

Claim 16 (canceled)

Claim 17 (canceled)

Claim 18 (currently amended) A compound of formula (III)

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wherein R¹ is C₆₋₁₄aryl substituted with one or more substituents selected from the group consisting of halogen, -CF₃, C₁₋₈alkyl, -CN, -SR⁶, -S(O)₂R⁶; or heterocycle, optionally substituted with one or more substituents selected from the group consisting of C₁₋₈alkyl, -CN, and C₆₋₁₄arylC₁₋₈alkyl; R⁶ is C₁₋₈alkyl, optionally substituted with halogen; R⁷ is C₁₋₈alkyl, optionally substituted with ~~one or more substituents selected from the group consisting of hydroxy, -NH₂, or heterocycle~~; R⁴ is heterocycle, optionally substituted with one or more substituents selected from the group consisting of oxo, halogen, C₁₋₈alkyl, -OR¹¹ and -SR¹⁰N(R¹⁰)₂; or C₆₋₁₄aryl substituted with one or more substituents selected from the group consisting of hydroxy, -CF₃, C₁₋₈alkyl, hydroxyC₁₋₈alkyl, -CN, -NO₂, -C(O)NH₂, -S(O)₂R⁷, -S(O)₂NR⁸R⁹, -OR¹¹, -C(O)NR¹¹, -C(O)OR¹¹, -NR¹¹, -NC(O)R¹¹, heterocycle which may be optionally substituted with one or more substituents selected from the group consisting of oxo